

ABSTRACT

A method for selectively assembling a molecular device on a substrate comprises contacting the first substrate with a solution containing molecular devices; impeding bonding of the molecular devices to the substrate such that application of a voltage potential to the substrate results in assembly of the molecular device on the substrate at a rate that is at least 1.5 times the rate of assembly of the molecular device on a voltage-neutral substrate; and applying a voltage potential to the substrate so as to cause the molecular devices to assemble on the substrate. More specifically, selective assembly can be obtained by providing a mixture comprising protected molecular devices in solution; removing protective groups from some of the molecular devices; activating the de-protected molecular devices; contacting the substrate with the solution; and allowing the activated devices to bond to the substrate such that they assemble on the first substrate.